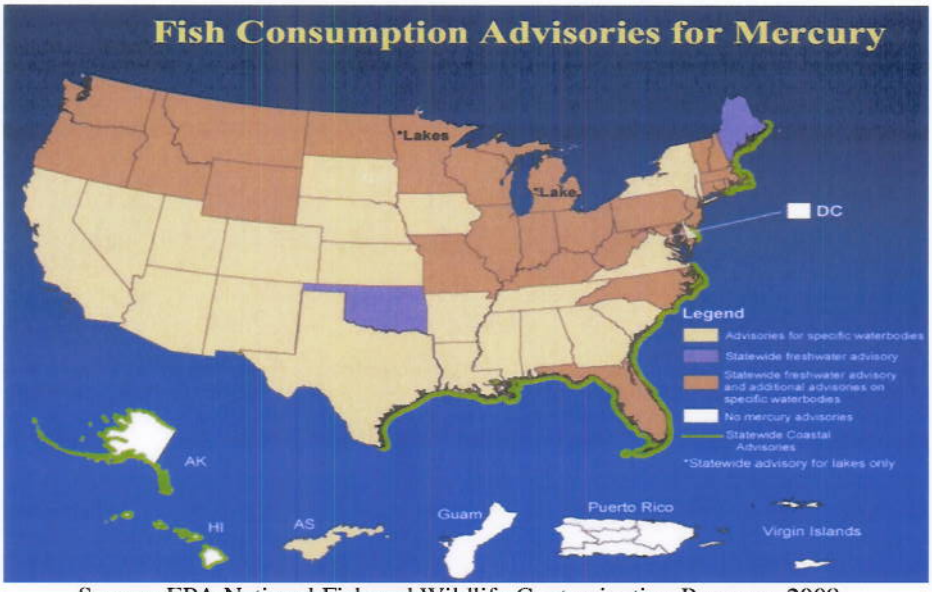


Source: EPA National Fish and Wildlife Contamination Program, 2008

Data from a 2007 NOAA Report to Congress on Mercury Contamination in the Great Lakes illustrated that sediment mercury concentrations have declined since 1970s—a trend that was reconfirmed by the findings of Paul E. Drevnick, published in *Environmental Pollution* in May 2011. This study focuses on the historic and recent changes in mercury deposition in sediment core samples from the Great Lakes (Ontario, Michigan, and superior) and inland lakes and confirms that mercury levels in core sediments in Lake Michigan have declined in the last 30 years. Unfortunately, at the time of the NOAA report trends in mercury levels in biota for Lake Michigan were unidentifiable due to lack of data.

Analysis of mercury in core sediments and other aspects, such as surface water and fish tissue, are only pieces of greater understanding of the mercury fluxes in Lake Michigan water and the implications for human health. Currently, the Great Lakes Restoration Initiative is supporting mercury related projects throughout the Great Lakes Basin, including research that specifically targets mercury cycling and bioaccumulation in the Great Lakes. More data is greatly needed for a more comprehensive understanding of the cycling of mercury in the environment and the resulting accumulation in organisms.

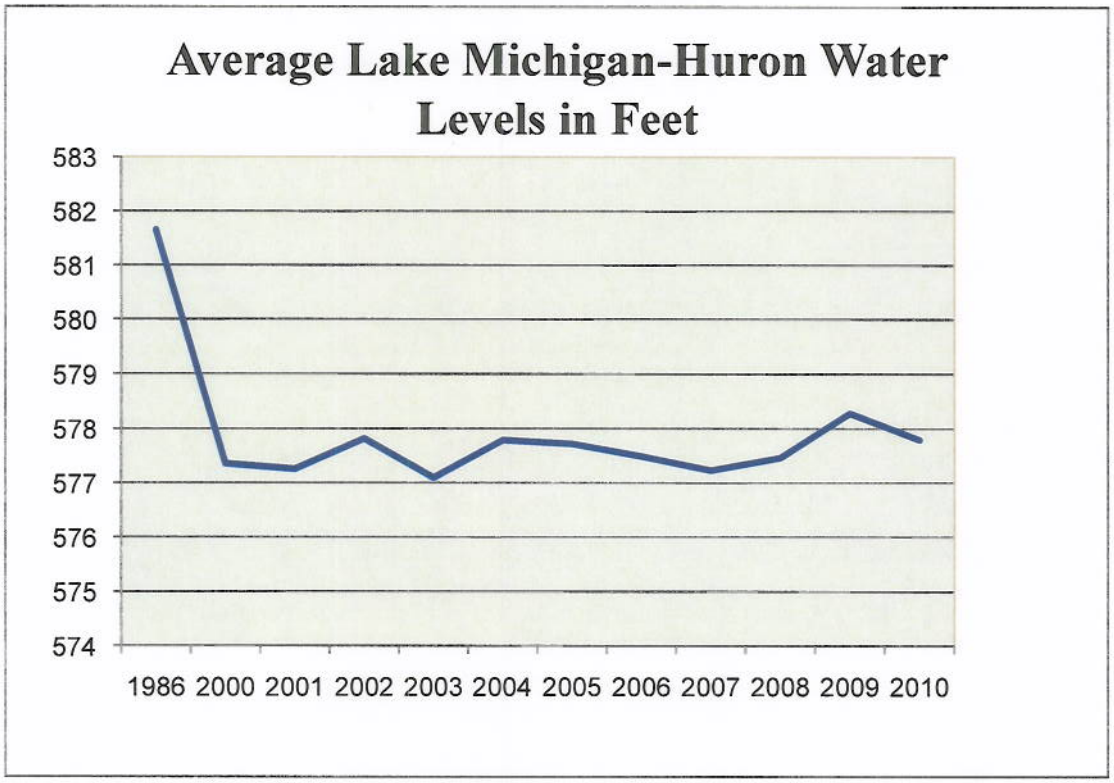
- **Action Items:**
  1) EPA should review/update mercury monitors and tests

The correlation between mercury cycling and the bioaccumulation in Lake Michigan organisms is poorly understood. The EPA must review and update its existing mercury monitoring protocols to achieve a better understanding of mercury levels in our water and should report to Congress the trend of mercury contamination in the lakes.

LAKE MICHIGAN WATER LEVELS

- **Grade: D**

Explanation: This section uses the maximum historic water level recorded for Lake Michigan-Huron as the benchmark. For every foot water levels decrease from the maximum water level of 582 feet, a letter grade is deducted; A = 0-1ft, B= 1-2, C= 2-3, D= 3-4, F= 4+



Lake levels are an important factor in shoreline erosion and can affect the ability for shippers to navigate along the waterways smoothly and have negative implications on drinking-water intakes. Lake levels are naturally affected by precipitation, evaporation and runoff sources. Since the 1990s, water levels of Lake Michigan are on the decline.

According to the historic water level data from the Army Corps of Engineers, Lake Michigan-Huron water levels are below the long-term average by approximately ½ foot. Record high levels of 1986 were over three feet higher than the current average. Lake Michigan experienced the record maximums for water levels in 1986 at 582 ft. From data collected by the Army Corps, NOAA and the Canadian Hydrographic Service the daily water level average for Lake Michigan-Huron was 578.31ft as of August 1, 2011 - approximately a three-feet drop in lake levels in the last 25 years.

Low water levels affect recreational boating, commercial navigation, fishing, and aquatic ecosystems. While high water levels can cause severe erosions, low levels often effect commerce and require shippers to "light-load" their cargoes. According to NOAA'S Great Lakes Environmental Research Lab, carriers often carry five-to-eight percent less cargo and raw materials. The economic impacts of light loading are enormous. Some shippers estimate that every foot reduction in draft equates to a loss of $250,000 to $800,000 in cargo. Fluctuating water levels is only one natural physical process that affect the Great Lakes, but they have severe implications for our shorelines, ecosystems, and long-term decisions on water withdrawals for drinking water and agriculture.

- **Action Item:**
  1) **Support the Great Lakes Compact**

The Great Lakes are a shared, international resource and it is important that all stakeholders are committed to their protection and will be stewards for future generations. In 2008, the Great Lakes –

St. Lawrence River Basin Water Resources Compact was formed to join the Great Lakes states and the federal government in a common pledge to protect the Great Lakes.

Withdraws that occur in Ohio's Lake Erie basin not only impact Ohio, but also Indiana, Michigan, New York, Ontario, and Pennsylvania's waters. In this spirit the compact is an important commitment from the states with the common mission to regulate the water use of the Great lakes and reduce annual water diversions. While all the Great Lakes states have ratified the compact and a deadline of December 2013 was set to require all states to implement and register their water withdrawal and diversion plan. Moving forward, these plans of action will preserve the Great Lakes, which provide drinking water to over 30 million Americans.

2) **Action Item: Enact *Harbor Maintenance Act of 2011***

While we cannot control the level of water in the Great Lakes directly, lake levels are vital information that greatly alters the environment and the shipping economy in the United States. The Senate is currently considering proposals that target specific concerns, such as dredging, which are exacerbated by sustained low water levels. Senator Carl Levin (D-MI) and Senator Kay Bailey Hutchison (R-TX) introduced, S. 412, the *Harbor Maintenance Act of 2011* to ensure funds in the harbor maintenance trust fund are used for intended purposes to address the maintenance dredging of our harbors. There is currently a balance of more than $6 billion in the Harbor Maintenance Trust Fund (HMTF) that is not being used to address the backlog of maintenance dredging. This proposal would ensure that moving forward the annual funds deposited into the trust fund will be used for intended purposes and would help to address the current a dredging backlog of 18 million cubic yards in the Great Lakes.

Cleanup of Superfund Polluted Sites

Grade: B

Explanation: For over 25 years Waukegan Harbor has been recognized as an international area of concern along Lake Michigan. While the full remediation process has been arduous, plans for removing the contaminated sediment from the Harbor are in place. The full restoration of beneficial use of Waukegan Harbor and the ultimate delisting as an Area of Concern (AOC) is within reach.